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NOMENCLATURAL NOTES AND NEW CONCEPTS OF TROPICAL AMERICAN ORCHIDS

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DURING the course of recent studies, I have found it necessary to make numerous changes in the status of published concepts, to amplify certain descriptions and to describe several orchids which appear to be new. This addition to the number of recorded species and varieties, together with many similar ones, shows that tropical America from the northern boundary of Mexico to the southern borders of Peru and Brazil is a veritable storehouse of plants new to science. Only the collector and the taxonomist are necessary to bring these to light.

The arrangement of the species follows the order proposed by Dr. Rudolf Schlechter in "Notizblatt des Botanischen Gartens u. Museums Berlin-Dahlem 9 (1926) 563-591.

Cranichis ciliilabia *C. Schweinfurth sp. nov.*

Herba terrestris, gracilis. Folia plura, plerumque basalia et petiolata; lamina ovata, acuta vel breviter acuminata, parva. Caulis basi glaber, supra dense glanduloso-pubescent, vaginis pluribus remotis ornatus. Inflorescentia laxa pluriflora cum floribus parvis membranaceis. Sepala elliptica vel ovalia, acuta. Petala oblique elliptica, pro genere lata, dense ciliata. Labellum simplex, cuneato-

obovatum, antice late rotundatum, concavum, dense longe ciliatum. Columna perbrevis.

Plant terrestrial, slender, about 21.5 cm. tall. Roots tuberous, fasciculate, slender, lanuginose. Leaves several, the four basal blades rosulate, slender-petioled; lamina ovate, acute or short-acuminate, broadly cuneate to subtruncate at the base, commonly 3.2–3.5 cm. long, up to 2.2 cm. wide; petiole channelled, slightly dilated above and below, about 2 cm. or less long. A fourth similar but sessile leaf rises near the base of the stem. Stem slender, glabrous in the lower portion, densely glandular-pubescent above, bearing four distant sheaths of which the lower ones have a close long-sheathing tubular base and the lowermost is dilated into a small foliaceous blade. Raceme loosely 17-flowered, about 4.5 cm. long, with the apical portion (bearing immature flowers) nodding. Flowers small, but medium-sized for the genus, membranaceous. Sepals very sparingly glandular-pubescent on the outer surface. Dorsal sepal elliptic, acute, concave, 3-nerved with the lateral nerves branching below, about 5.9 mm. long and 3.2 mm. wide when expanded. Lateral sepals oval, acute, concave, 5-nerved, about 5.6 mm. long and 3.2 mm. wide. Petals obliquely elliptic, acute or subacute, 4-nerved, densely ciliate with the cilia longer on the anterior margin, about 5 mm. long and 2.7 mm. wide. Lip simple, cuneate-obovate, broadly rounded in front, minutely acute at the apex, densely long-ciliate, about 4 mm. long and 3 mm. wide near the front in natural position, rather deeply concave especially above, 3-nerved, the lateral shorter nerves recurved in the middle of the lamina and having two or three short recurved branches. Column very short, with the stalk of the anther arising near the base.

The long-ciliate lip seems to be unique in the genus and the ciliate petals are remarkably broad.

MEXICO: Chiapas, at 4000-6000 feet altitude, "moist bank of trail above Liquidambar," flowers white, November 9, 1945, *A. J. Sharp* 45977 (TYPE in Herb. Ames No. 65446).

Pleurothallis Broadwayi *Ames* Orch. 2 (1908) 267.

Pleurothallis guadalupensis Cogniaux in Urban Symb. Antill. 6 (1909) 432.

Pleurothallis Williamsii *Ames* Orch. 7 (1922) 120.

Pleurothallis nana A. & S. in Sched. Orch. 8 (1925) 29.

The above synonymy, except for *Pleurothallis nana*, has already been published (C. Schweinfurth in Bot. Mus. Leafl. Harvard Univ. 8 (1940) 41).

At the time when *Pleurothallis nana* was erected, it was thought to be distinct from the concepts referable to *P. Broadwayi*. It seemed to have longer and more branched stems than the other species of this group. It also appeared to be separable by reason of its longer pedicels, "snow white" rather than yellow or greenish yellow flowers and especially because of its narrower and more acuminate sepals.

A recently acquired Mexican collection (*Nagel & Juan G.* 6447), although it appears to be inseparable vegetatively from the Costa Rican *P. nana*, has long pedicels and sepals intermediate in form between those of typical *P. Broadwayi* and *P. nana*. It is further noted as having pale yellow-green flowers, as in *P. Broadwayi*. A Costa Rican collection (*Austin Smith* H541) also has pedicels of a length intermediate between the two concepts and flowers noted as pale lemon yellow as in *P. Broadwayi*; but it has sepals of quite the form of *P. nana*.

Therefore, in view of the great variability naturally to be expected of a wide ranging plant, it seems advisable to regard *P. Broadwayi* as representing one polymorphic species. It occurs in Mexico (Oaxaca), Honduras, Costa Rica (type of *P. nana*), Panama (type of *P. Williamsii*),

Cuba, Martinique, Guadeloupe (type of *P. guadalupensis*) and Venezuela (Island of Margarita).

Pleurothallis leucantha Schlechter in Fedde Repert. 10 (1912) 353.

Pleurothallis Sanchoi Ames in Sched. Orch. 4 (May 1923) 26.

Pleurothallis gonioglossa Schlechter in Fedde Repert. Beih. 19 (November 1923) 189.

Judging from the type description of the Guatemalan *Pleurothallis leucantha* (amplified by an analytical drawing made under the supervision of Dr. Schlechter), that species differs from the Costa Rican *P. Sanchoi* (represented by the type and several subsequent collections), by having generally longer and more acuminate leaves, smaller flowers, somewhat dissimilar straighter petals and an obtuse (not apiculate) lip.

In the Ames Herbarium there is a Guatemalan collection (*Harry Johnson 609*) taken to represent *P. leucantha* which came from the same region of Cobán as the type and at about the same altitude. This collection, which may be called a topotype of *P. leucantha*, has somewhat larger flowers than specified as typical, slightly curved petals and an apiculate lip which very nearly coincides with that of *P. Sanchoi*. Moreover, one Costa Rican collection (*Standley & Valerio 45983*) is entirely typical of *P. Sanchoi*, except that the petals are nearly straight, as in typical *P. leucantha*.

The concept described as *Pleurothallis gonioglossa*, which is represented by an isotype and analytical drawings in the Ames Herbarium, appears to be an exact vegetative counterpart of *P. Sanchoi*, although it has slightly larger flowers than the latter species. Except for inconsequential floral differences, this species appears to be inseparable from *P. leucantha*.

It seems logical, therefore, to regard *Pleurothallis leucantha* as a rather widespread and variable species in Central America.

Octomeria pygmaea C. Schweinfurth sp. nov.

Herba minutissima, epiphytica, corticicola. Caules perbreves, uniarticulati, vaginis duabus membranaceis tubulatis evanidis omnino obtecti. Folium anguste ellipticum, acutum, sessile, rigide nervosum, crasse marginatum. Inflorescentiae saepissime duae vel tres, abbreviatae, uniflorae. Flos membranaceus, perparvus sed pro planta magnus. Sepala persimilia, triangulari-lanceolata, acuta vel acuminata, trinervia, omnino libera. Petala lanceolata vel elliptico-lanceolata, acuta vel acuminata, uninervia. Labellum in circuitu rhombico-ovatum, medio profunde trilobatum; lobi laterales falcato-dolabriformes, porrecti; lobe medius obovato-oblongus, late obtusus, lobos laterales valde excedens. Columna in pedem subaequalem extensa.

Plant minute, caespitose, epiphytic in the cracks of the bark. Roots fibrous, relatively stout, glabrous. Stems numerous, clustered, abbreviated, about 4.8 mm. or less long, 1-jointed near the base, entirely concealed by two tubular scarious evanescent sheaths. Leaf solitary, sessile, narrowly elliptic, up to about 8 mm. long and 2.1 mm. wide, acute, conduplicate at the base, coarsely marginate, rigid-nervose, with the mid-nerve enlarged and prominent beneath. Inflorescences abbreviated, 1-flowered, apparently two or three to a stem. Flower very small, but large in relation to the plant, membranaceous. Sepals free, 3-nerved, concave. Dorsal sepal triangular-lanceolate, acute or acuminate, about 1.75 mm. long and 0.75 mm. wide. Lateral sepals very similar, but a little longer and wider, oblique. Petals lanceolate to elliptic-lanceolate, acute or acuminate, 1-nerved, about 1.5 mm.

long and 0.5 mm. wide. Lip rhombic-ovate in outline, deeply 3-lobed near the middle, cuneate at the base, about 1.1 mm. long and 0.87 mm. wide across the lateral lobes, with a pair of fleshy keels through the lower portion; lateral lobes falcate-dolabriform, subequal to the mid-lobe, obtuse, porrect, erect in natural position; mid-lobe obovate-oblong, broadly obtuse, much exceeding the lateral lobes. Column about half as long as the petals, produced into a subequally long foot. Pollinia eight, pyriform.

This species is probably the most minute member of the genus *Octomeria* yet described and ranks with the most insignificant orchids known to science. It appears to be allied to *O. minuta* Cogn., but differs in having acute sepals (when expanded), the lateral ones being free, as well as in having a widely dissimilar lip.

I take the liberty of quoting from the notes of the collector of this remarkable little orchid, as follows:

“After making camp one afternoon I put on the climbing irons in order to collect a specimen of a beautifully flowering *Cunuria crassipes*, a relative of *Hevea* rubber. When half way up the ninety foot tree, I stopped to lean back in the belt and rest. My glance was caught by what seemed to be a tiny orchid growing, together with the ever-present mosses and lichens, in the deep furrows of the shaggy dark brown bark of the tree. Carefully I plucked it out. Examination with a lens proved that it was indeed a very beautiful little orchid less than one half an inch high with yellowish flowers, of a genus unknown to me. Calling to Francisco to stop his cooking, I put the little plant in my note-book and let it fall to him. All other thoughts dismissed, we spent the rest of the afternoon searching the trunks of all the trees in the vicinity, but only a few additional specimens of the orchid were found.

“It is a coincidence that here occurred examples of the two extremes of the jungle plants which interest me most—the most diminutive of epiphytic orchids and the most gigantic of trees growing together, my interest in the latter leading to the discovery of the former.”

BRAZIL: Upper Rio Negro drainage-area, Rio Dimiti, at the base of Mt. Dimiti, epiphytic in cracks of the bark of *Cunuria crassipes*, flowers yellow, May 12-19, 1948, *Richard Evans Schultes & Francisco Lopez 10003* (TYPE in Herb. Ames No. 65206).

Epidendrum flexuosissimum *C. Schweinfurth*
sp. nov.

Herba parva, epiphytica, crassior. Rhizoma repens. Caules breves, robusti, approximati, vaginis tubulatis vel vaginarum fibris omnino tecti, apice bifoliati. Folia subopposita, late patentia, ovalia vel orbicularia, sessilia. Inflorescentia supra paniculata, laxe multiflora, cum pedunculo rachideque valde fractiflexa. Flores parvi, cum segmentis late patentibus. Sepalum dorsale elliptico-lanceolatum vel oblongo-lanceolatum, acuminatum. Sepala lateralibus paulo majora, obliquissime elliptico-lanceolata, complicato-acuminata. Petala linearia, leviter sigmoidea, dense ciliata. Labellum columnae valde adnatum; lamina carnosa, medio trilobata; lobi laterales erecto-incurvi, aliformes; lobus medius triangularis, porrectus.

Plant small, rather stout, about 8-17 cm. high. Rhizome creeping (usually fragmentary in our specimens). Roots numerous, fibrous, glabrous, slender, commonly unbranched. Stems short, stout, suberect to lightly flexuous, approximate and spreading from the rhizome, 1- or 2-jointed, entirely concealed by two or three tubular imbricating sheaths or the fibres of sheaths, about 1-3 cm. long, 2-leaved at the apex. Leaves subopposite, widely spreading, oval to orbicular, sessile, apparently always rounded at the apex and sometimes with a small

mucro, coriaceous, about 1.5–3.6 cm. long, up to 2.5 cm. wide. Inflorescence divaricately paniculate, much surpassing the leaves, with the peduncle and rachis markedly fractiflex; peduncle 3–4.5 cm. long, complanate and narrowly bialate with two to four prominent spreading bracts which are conduplicate, broadly winged on the back and 1.2 cm. or less long. Bracts subtending the branches of the panicle similar but smaller. Panicle loosely several- to many-flowered, with spreading or recurved few-flowered branches. Flowers small, pale greenish yellow, with spreading segments. Dorsal sepal elliptic-lanceolate or oblong-lanceolate, acuminate or short-acuminate, 3-nerved, about 8 mm. long and 2.2–2.9 mm. wide, dorsally keeled toward the apex. Lateral sepals very obliquely elliptic-lanceolate, complicate-acuminate above, concave, 3-nerved, prominently keeled toward the apex, 8.1–8.4 mm. long measured along the posterior margin, about 3 mm. wide. Petals linear, lightly sigmoid, acuminate, 1-nerved, with the margins densely ciliate, about 7 mm. long and 1.1 mm. wide. Lip adnate to the column nearly to the apex; lamina fleshy, concave below, 3-lobed near the middle, cordate at the base, acute or acuminate at the tip, 4–5 mm. long in the center; lateral lobes erect-incurved, semiovate or aliform, with or without a free apex; mid-lobe about equally large with the lateral lobes, porrect, triangular or ovate-triangular. Column stout and dilated upward when seen from the side, subentire at the apex, about 4 mm. long at the back.

This little species does not appear to have any near allies.

PANAMA: Coclé, Cerro Pajita, hills north of El Valle, at 1100 meters altitude, October 27, 1946, *Paul H. Allen 3780* (TYPE in Herb. Ames No. 65445).

Epidendrum pajitense *C. Schweinfurth sp. nov.*

Herba elata. Caulis suberectus, gracilior, vaginis arctis

tubulatis pustulatis omnino velatus. Folia disticha, late patentia, superne solum praesentia, oblongo-lanceolata vel anguste elliptico-lanceolata. Inflorescentiae laterales et terminales, laxe pluriflorae. Florum segmenta valde patentia. Sepala elliptico-oblonga, lateralia obliqua. Petala cuneato-spathulata, subacuta. Labellum columnae valde adnatum; lamina trifida, cum lobis lateralibus oblique obovato-oblongis et lobo medio flabellato-cuneato, profunde bilobato. Columna apice quadrialata.

Plant rather tall, "saprophytic." Rhizome apparently abbreviated. Roots fibrous, numerous, rather stout, glabrous. Stem suberect, rather slender, with one strict flower-bearing branch above (the main stem broken off), entirely concealed by close tubular pustulose sheaths which are leaf-bearing above, about 49 cm. high. Leaves several to numerous, distichous, spreading, oblong-lanceolate or narrowly elliptic-lanceolate, obtuse to subacute, sessile at the shortly cuneate base, 3.5–6.2 cm. long, about 1.3 cm. or less wide, coriaceous. Inflorescences lateral and terminal; the lateral on the upper part of the stem, racemose, short, loosely few-flowered; the terminal one loosely paniculate with ascending few-flowered branches. Floral bracts minute, concave, ovate or oblong-ovate. Flowers medium-sized, rose-pink, with widely spreading more or less convex segments. Dorsal sepal oblong or elliptic-oblong, broadly obtuse to subacute, about 7-nerved, rather fleshy, about 9.3 mm. long and 3.9 mm. wide. Lateral sepals similar, obliquely elliptic-oblong, obtuse to subacute with a blunt dorsal mucro, about 10.5 mm. long, measured from the base of the dorsal margin to the tip, and 4 mm. wide, about 7-nerved. Petals cuneate-spatulate, abruptly rounded above with a subacute apex, 3-nerved with the lateral nerves branching, slightly oblique, about 10 mm. long and 3.2 mm. wide above. Lip adnate to the column up

to the tip; lamina 3-parted, much exceeding the sepals, submembranaceous; lateral lobes widely spreading, obliquely obovate-oblong, with a more or less truncate and obscurely lobulate outer margin, separated by a pair of small complanate calli, about 7.5 mm. long through the middle lengthwise and 3.9 mm. wide above; mid-lobe porrect, narrowly flabellate-cuneate, conspicuously bilobed with a minute blunt apicule between the oblong-rounded lobules and with a small callus at the base between the lateral calli, about 8.2 mm. long to the tip of an apical lobule and 7.2 mm. wide across the apical lobules. Column short, very stout and dilated upward when viewed from the side, about 6.5 mm. long at the back including the erect 4-lobed wing, with the middle lobes oblong-subquadrate and irregularly lobulate on the truncate apex.

This species has three rather close allies. *Epidendrum exasperatum* Reichb.f. differs in having smooth cauline sheaths, verrucose outer surfaces of the sepals and flowers of another color. *E. Schumannianum* Schltr. has broader leaves, broader petals, relatively smaller lateral lobes of the lip and spotted flowers. *E. verrucosum* Sw. var. *myrianthum* (Lindl.) Ames & Correll shows much narrower and relatively longer leaves and a lip with dissimilar details.

PANAMA: Coclé, Cerro Pajita, hills north of El Valle, at 1100 meters altitude, October 27, 1946, "saprophytic," in dense shade, Paul H. Allen 3784 (TYPE in Herb. Ames No. 65444).

***Epidendrum strictiforme* C. Schweinfurth sp. nov.**

Herba mediocris, epiphytica, recta. Rhizoma abest. Caulis in siccitate crassus, foliorum vaginis ancipitibus omnino vestitus. Folia disticha, quinque ut videtur, ovata vel oblongo-ovata, apice rotundata, basi lata amplexicaulia. Inflorescentia erecta; pedunculus spathis conduplicatis, erectis, imbricatis, duabus vel tribus omnino

obtectus; racemus dense multiflorus. Flores parvi. Sepalum dorsale oblanceolatum, acutum. Sepala lateralía oblique oblongo-oblanceolata, acuta vel breviter acuminata. Petala oblanceolato-linearía, leviter incurva, acuta vel breviter acuminata. Labellum columnae valde adnatum; lamina trilobata, carnosa; lobi laterales rotundato-dolabriformes, extus irregulariter crenulati; lobus medius ovatus, acutus. Columna generis, recta.

Plant medium-sized for the genus, stout, epiphytic, up to 37 cm. tall. Roots and rhizome not present. Stem apparently stout, entirely concealed by strongly complanate tubular leaf-sheaths. Leaves five, loosely distichous, ovate or oblong-ovate, rounded and minutely bilobed at the apex, amplexicaul at the broad base, about 5-7.5 cm. long, 2.8-3.4 cm. wide, spreading. Inflorescence erect, racemose above; peduncle apparently about 11 cm. long, entirely concealed by two or three strictly erect, conduplicate, imbricating spathes which are rounded to acute above; raceme densely many-flowered; floral bracts lax, linear-lanceolate, the lower ones about equaling the slender pedicellate ovary. Flowers small, pale brownish green flushed with purple, spreading. Dorsal sepal oblanceolate or elliptic-oblanceolate, acute, 5-nerved, about 9-10 mm. long and 3-3.4 mm. wide above. Lateral sepals obliquely oblong-oblanceolate, lightly sigmoid, acute or short-acuminate, longitudinally concave, 5-nerved, about 10.3-11 mm. long on the posterior margin and 3-3.3 mm. wide just above the middle. Petals oblanceolate-linear, lightly incurved, acute or short-acuminate, 1-nerved, about as long as the dorsal sepal and 1 mm. wide above. Lip adnate to the column up to its apex; lamina sharply 3-lobed, fleshy, cordate at the base, about 5-5.8 mm. long in the center and 6.4-7.7 mm. wide across the lateral lobes; lateral lobes rounded-dolabriform, with irregularly crenate outer mar-

gins; mid-lobe ovate, acute, protuberant, very fleshy, about 3–3.5 mm. long and 2.5–2.9 mm. wide at the base; disc with a pair of small fleshy conical calli at the base. Column straight, dilated above in front, retuse in the center at the summit, about 6.5–7 mm. long on the dorsal surface, produced on each side into an obliquely semiorbicular-ovate lobe.

This species apparently lacks any close allies. It may be related to *Epidendrum sarcodes* Lindl., but differs in having the peduncle entirely concealed by the spathes, and in having acute sepals, etc.

PERU: Huánuco, Carpish, at 2800 meters altitude, on a tree in cloud forest, leaf not thick but very hard and stiff, tip of column white, September 1946, *F. Woytkowski 37014* (TYPE in Herb. Ames No. 65451).

***Brassavola ovaliformis* C. Schweinfurth sp. nov.**

Herba epiphytica, pro genere mediocris, deserticola. Rhizoma repens, nodulosum. Caules approximati, plusminusve elongati, vaginis tubulatis imbricatis scariosis omnino obtecti. Folia subteretia, gracilia, elongata, in siccitate arcuata. Flores duo, grandes, in pedunculi apice approximati. Sepala petalaeque late patentia, valde similia, lanceolato-linearia, sensim angustata, apice acuta. Labellum multo brevius, inferne leviter involutum, expansum ovale-ovatum, acutum, ecarinatum, margine integro. Columna perbrevis, apice trialata, cum alis laterilibus falcato-lanceolatis et recurvis.

Plant epiphytic. Roots fibrous, covered with a stout glabrous velamen. Rhizome creeping, nodulose, consisting of the approximate swollen bases of the stems. Stems crowded, up to 12.7 cm. or more long (the longest one incomplete), several-jointed, entirely enveloped by long tubular scarious imbricating sheaths, gradually dilated upward, 1-leaved at the apex. Leaves very slender, subterete, channelled, arcuate in the dried specimen, about

27.2–38.2 cm. or more long (the longest blade incomplete), apparently about 3 mm. in diameter. Peduncle exceeding 2.5 cm. in length (incomplete), with two flowers at the apex. Floral bracts very small, lanceolate-ovate, acuminate, deeply concave, amplexicaul, much shorter than the pedicellate ovary which is about 4 cm. long. Flowers large with widely spreading segments. Dorsal sepal lanceolate-linear, long-narrowed to an acute tip, about 5.3–5.8 cm. long and 5.5 mm. wide near the base. Lateral sepals closely similar, about 5.9 cm. long and 5 mm. wide below. Petals similar to the sepals, linear-lanceolate, about 5–5.3 cm. long and 5.4 mm. wide below. Lip much shorter than the other segments, oval-ovate or lanceolate-oval in outline when expanded, about 4.7–4.9 cm. long and 2.9 cm. wide across the middle, acute, ecarinate, with the lower half gradually in-rolled in natural position, the margins being entire. Column minute, with an erect 3-lobed wing at the apex, about 6.5 mm. high at the back; lateral wings falcate-lanceolate and recurved; middle wing low and irregular, abruptly extended in the center into a ligulate, apically truncate and denticulate projection; anther oblong-ellipsoid, 2-celled, with four narrowly oblong-ellipsoid pollinia in each cell.

This species appears to have no near allies. In the whiteness of the flowers and in the apex of the column it resembles the widespread *Brassavola nodosa* (L.) Lindl., but it lacks the elongated narrow serrated basal portion of the lip of that species. *B. Perrinii* Lindl., from Brazil, differs in having smaller green flowers, a somewhat carinate lip and dissimilar column-wings.

PERU: Amazonas, La Peca, northeast of Jaen, at 1000 meters altitude, on dwarf trees in dry “desert forest full of cacti,” flower uniformly white, the lip having a median greenish yellow line above and beneath, “interior parts . . . pale green save the whitish column and the two formations immediately below, which are whitish with a brown

hue, leaves dark green, tapering, stiff, round like thick wire," November 18, 1947, *F. Woytkowski 37016* (TYPE in Herb. Univ. Calif.).

***Odontoglossum angustatum* Lindley** in Bot. Reg. 23 (1837) sub t. 1992; Fol. Orch. *Odontoglossum* (1852) 17, no. 48, non *O. angustatum* Lindley Orch. Linden. (1846) 17, no. 90; Bateman Monog. *Odontog.* (1874) t. 26.

Odontoglossum tetraplasium Reichenbach filius in Gard. Chron. n.s. 3 (1875) 558.

Odontoglossum bellum Schlechter in Fedde Repert. Beih. 9 (1921) 108; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 127, nr. 499.

Odontoglossum Loesenerianum Schlechter in Fedde Repert. Beih. 9 (1921) 110; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 128, nr. 502.

A sketch of the panicle with a drawing of a solitary flower (natural size) and a single enlarged lip of *Odontoglossum tetraplasium* from the Reichenbach Herbarium shows that this concept cannot reasonably be separated from *O. angustatum* Lindl. (1837), as represented by a photograph of the type specimen from the Lindley Herbarium bearing a pen drawing of the callus on the lip. The vegetative parts were lacking in the type specimens of both species, but these were supplied for *O. angustatum* by a subsequent collection mounted with the Lindley type.

Judging from the description and floral analysis, *Odontoglossum bellum* is also a form of this variable species. *O. bellum* appears to be quite as large throughout as typical *O. angustatum*, but the sepals are not so elongate-acuminate as in many forms of the latter. The lip which is described and shown as obtuse and apiculate, is not very dissimilar to the acute lip of *Vargas 2888* and *Vargas 3664* which have been determined as *O. angustatum*.

The floral analysis of *Odontoglossum Loesenerianum* indicates that this concept is surely referable to *O. angustatum* as first described by Lindley, the only apparent discrepancies being that the bracts are noted as being equal to or a little exceeding the ovary (they are about half as long in *O. angustatum*) and the flowers are described as somewhat smaller. This difference in size is probably due to an immature condition.

In the several collections here referred to *O. angustatum*, there appears to be a wide variation both in vegetative and floral size and in the form of the lip. The most striking variations from the usual form are seen in *Vargas* 2888, where the obviously immature flowers are smaller than those of *O. Loesenerianum* and have a lip which is more or less lightly pandurate; and in *Weberbauer* 7797, where the carinate calli at the base of the lip are broader, blunter and thicker than in the usual form. All of the Peruvian collections included in this species, however, have a general similarity of lip calli, but there is apparently lacking from all of them one extra pair of tubercles present in the type.

It seems to me, therefore, that *Odontoglossum angustatum* is a conspicuous example of the polymorphism that makes the tropical orchids so difficult.

Odontoglossum aureo-purpureum (as *auropurpureum*) *Reichenbach filius* in *Linnaea* 22 (1849) 848; Lindley Fol. Orch. *Odontoglossum* (1852) 15, no. 44.

Odontoglossum compactum *Reichenbach filius* in *Gard. Chron.* n.s. 3 (1875) 492.

Odontoglossum Koehleri *Schlechter* in *Fedde Repert. Beih.* 9 (1921) 109; ex *Mansfeld* in *Fedde Repert. Beih.* 57 (1929) t. 128, nr. 501.

The concept *Odontoglossum compactum* is based in part on Peruvian specimens collected by W. Lobb which

were formerly referred by Lindley (Fol. Orch. *Odontoglossum* p. 15) to *O. aureo-purpureum*. It was separated from the earlier species by its more compact densely flowered panicles of larger flowers. However, two recent Peruvian collections (*Vargas* 2879 and *Metcalf* 30742) have the loose panicles seen in the typical Venezuelan *O. aureo-purpureum*, but they have larger flowers than those of the type which they appear to match in floral details.

Odontoglossum Koehleri is described as having a rather densely flowered panicle, like *O. compactum*; but its floral segments, except for being slightly broader, coincide well with those of typical *O. aureo-purpureum*.

It seems to me, therefore, that *O. aureo-purpureum* is a widely variable species which includes the above concepts.

***Odontoglossum brevifolium* Lindl. var. *Weberbauerianum* (Kränzln.) C. Schweinfurth comb. nov.**

Oncidium Weberbauerianum Kränzlin in Engler Bot. Jahrb. 37 (1906) 389.

Cyrtorchilum Weberbauerianum Kränzlin in Notizbl. Bot. Gart. Berlin 7 (1917) 95, *nomen nudum*, in clavi; in Engler Pflanzenreich IV. 50, pt. 2 (Heft 80) (1922) 60, fig. 5H, a-c.

Odontoglossum Weberbauerianum Schlechter in Fedde Repert. Beih. 27 (1924) 109.

In Fedde Repert. Beih. 9 (1921) 170, Dr. Schlechter cites *Oncidium Weberbauerianum* as a synonym of the well-known *Odontoglossum brevifolium* Lindl.

I have not seen any figure of *Oncidium Weberbauerianum*, but, after examining an iso-type collection of *Odontoglossum brevifolium*, there appear to be several marked differences between that species and the description of *Cyrtorchilum Weberbauerianum* (supplemented by

a floral analysis). It seems to me, therefore, that the above varietal designation is preferable, for the reasons indicated in the following table of comparisons.

<i>Odontoglossum brevifolium</i>	<i>Oncidium Weberbauerianum</i>
Pseudobulbs ovoid to cylindric-ovoid, up to 5 cm. long.	Pseudobulbs "linear," up to 10 cm. long.
Leaves oval to oblong-elliptic, up to 15 cm. long and 7.6 cm. wide.	Leaves oblong, up to 20 cm. long and 4.5 cm. wide.
Sepals suborbicular to round-ovate, little longer than broad.	Sepals oblong, much longer than broad.
Lip deeply bilobed at the apex.	Lip obscurely lobulate in front.

***Odontoglossum flavescens* Rolfe** in Orch. Rev. 12 (1904) 92.

This species was too inadequately described to furnish a definite concept that can be visualized or keyed. The description, which gives no hint of vegetative parts, merely states that the flowers are clear yellow, that the segments are elliptical-oblong and subconnivent, while the blade of the lip is suberect, rounded below, with an oblong obtuse apex and has a very large 2-lobed callus appressed to the base of the column. It is noted as being allied to *O. retusum* Lindl., and was introduced by Messrs. F. Sander & Co., presumably from Ecuador and Peru.

A photograph of the type specimen in the Herbarium at Kew shows fragments of an elliptical-oblong pseudobulb which is about 8.5 cm. long and appears to be bifoliate or trifoliate. The single leaf shown is oblong-linear, short-acuminate, slightly narrowed to a sessile base, over 51 cm. long and about 2.4 cm. wide, with the mid-nerve very prominent beneath. The inflorescence shows a very loosely branched panicle with two horizontally spreading branches. The flowers are distant, secund, on long pedicels (up to 2 cm. long) much exceeding the minute bracts, and the segments appear to be about 1 cm. long.

Even with this additional information, however, it seems advisable to consider this concept among the obscure species.

Odontoglossum mystacinum (Lindl.) Lindley
Fol. Orch. *Odontoglossum* (1852) 6, no. 14.

Cyrtochilum mystacinum Lindley in Bot. Reg. 24
(1838) Misc. 30, no. 38; in Bot. Reg. 25 (1839) t. 62.

Odontoglossum rigidum Lindley in Benth. Pl. Hartw.
(1844) 152; Fol. Orch. *Odontoglossum* (1852) 7, no. 17.

Judging by an excellent photograph of the type of *Odontoglossum rigidum* from the Lindley Herbarium, this concept cannot reasonably be separated from the species depicted as *Cyrtochilum mystacinum* in the Botanical Register 25, t. 62. A slight difference is that the pseudobulb of the latter concept is represented as unifoliate, whereas that of *O. rigidum* is bifoliate with very unequal leaves. Recent Peruvian collections which are referable to this concept have sometimes unifoliate and sometimes bifoliate pseudobulbs. Although *O. rigidum* has a more branched and fractiflex panicle than that of *Cyrtochilum mystacinum*, the plate was obviously drawn from an immature specimen. A minor difference is that the wings of the column in the latter concept are rather broad and multifid, whereas they are drawn as rather narrow and serrate in *O. rigidum*.

Both species, however, have similar pseudobulbs and yellow flowers with almost identical segments. The sepals are lanceolate, the petals ovate-lanceolate and the lip pandurate-obovate. Moreover, the column wings are not easily seen in the specimens examined and appear to be variable.

This species appears to be limited to Peru, Ecuador, and perhaps Bolivia.

Odontoglossum obscurum *C. Schweinfurth* nom.
nov.

Mesospinidium Wallisii Reichenbach filius in *Linnaea* 41 (1876) 106, non *Odontoglossum Wallisii* Linden & Reichb.f. (1870).

As illustrated by a series of floral analyses from the Reichenbach Herbarium, *Mesospinidium Wallisii* has the basal part of the lip parallel to the column with the anterior half abruptly reflexed. It seems, therefore, to be clearly referable to the genus *Odontoglossum*.

Since the specific epithet, *Wallisii*, has already been used under *Odontoglossum*, the new name *obscurum* is proposed, in allusion to the fact that the pseudobulb and leaves were unknown when the species was described.

Except for the lip, which is described and illustrated as retuse at the apex and emarginate in the middle [of each side], this concept might reasonably be referred to *Odontoglossum longifolium* Lindl.

Odontoglossum Wyattianum *G. Wilson* in *Orch. Rev.* 36 (1928) 47.

In the diagnosis of this species there is no description of the vegetative parts of the plant nor of the inflorescence. With regard to the flowers, only the size and color are noted; there is no mention of the exact shape of the parts. Finally, the precise origin of the species is doubtful, for the description merely states that "the plant had been obtained from the Rev. Paul Wyatt, Bedford, to whom it had been forwarded by a friend in Peru, doubtless its native country."

It seems advisable, at the present time, to relegate this concept to the class of obscure species.

Oncidium falcipetalum *Lindley* *Orch. Linden.* (1846) 14, no. 76; *Fol. Orch. Oncidium* (1855) 5, no. 7;

Cogniaux Diet. Icon. des Orch. *Oncidium* (1899) t. 21.
Oncidium Pavonii Reichenbach filius ex Lindley Fol.
Orch. *Oncidium* (1855) 5, sub no. 7, *nomen nudum*;
Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80)
(1922) 38.

Oncidium ionodon Reichenbach filius in Linnaea 41
(1876) 23.

Oncidium Davisii Reichenbach filius in Linnaea 41
(1876) 24.

Cyrtochilum falcipetalum Kränzlin in Engler Pflanzenr.
IV. 50, pt. 2 (Heft 80) (1922) 37, fig. 1 G, a-c.

Cyrtochilum Pavonii Kränzlin in Engler Pflanzenr.
IV. 50, pt. 2 (Heft 80) (1922) 38.

Oncidium Pavonii, although lacking any original diagnosis, has been considered by the several writers mentioning the name as a form of *O. falcipetalum*.

Judging from the description (limited to the flower), the Peruvian *Oncidium ionodon* differs from *O. falcipetalum* only in having an emarginate dorsal sepal, clawed petals and porrect violet lateral lobes of the lip. However, the plate of *O. falcipetalum* illustrated in Cogniaux' work (l.c.) shows a crisped dorsal sepal, which might well be taken for emarginate, and petals that appear to be more or less clawed. Also, in specimens reasonably referred to *O. falcipetalum*, the petals (when examined closely) are very shortly clawed. In general, too, the color of the flower attributed to *O. ionodon* coincides with that shown in the plate indicated.

Oncidium Davisii, of which there is in the Ames Herbarium a tracing of the floral analysis from the Reichenbach Herbarium, is almost an exact counterpart of *O. ionodon*, except that the dorsal sepal is noted as acute, the petals as very shortly clawed, and the lateral lobes of the lip deflexed.

It is a strange coincidence that both *O. ionodon* and

O. Davisii are cited as synonyms of one species, *Cyrtorchilum monachicum*, by Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 47. However, the latter concept, based upon *Oncidium monachicum* Reichb.f., is described as having the dorsal sepal reniform, and thus is quite dissimilar to that of *O. falcipetalum* or its forms.

Apparently *Oncidium falcipetalum* is a variable species as regards floral size and the contour of the petals which varies from flat to conduplicate.

Originating in Venezuela (Merida), this species is also recorded from Colombia and Peru.

Oncidium heteranthum Poeppig & Endlicher Nov. Gen. ac Sp. 1 (1836) 34, t. 60; Cogniaux in Martius Fl. Bras. 3, pt. 6 (1905) 378, t. 87; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 175.

Oncidium bryolophotum Reichenbach filius in Gard. Chron. (1871) 738; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 181.

Oncidium inops Cogniaux & Rolfe in Journ. des Orch. 3 (1893) 346; 4 (1893) 74.

Oncidium megalous Schlechter in Fedde Repert. 9 (1911) 30.

The above species is extremely variable. This fact has led to the proposal of several later concepts, none of which, however, seems valid.

Oncidium bryolophotum, a native of Costa Rica and Panama, and represented in the Ames Herbarium by Reichenbach's detailed analyses, by authentic material examined by Kränzlin, and by many Central American collections, cannot logically be separated from the earlier *O. heteranthum* from Colombia, Peru and Bolivia.

In general, the Central American plants referred to *O. bryolophotum* have a mid-lobe of the lip which is relatively larger than that of *O. heteranthum*, but one Costa

Rican collection (*Standley 33741*) has a lip which is quite similar to that of the South American *O. heteranthum*.

One Peruvian collection of *O. heteranthum* (*Vargas 2531*) varies from the usual form in lacking the separate calli on the lateral (or basal) lobes of the lip and in having the apex of the column-wings narrowed to an acuminate point rather than having the typical more or less broad apex. Another Peruvian collection (*Schunke s.n.*, Herb. Field Mus. No. 571665) has a row of detached calli extending onto the lateral lobes on each side of the middle callus.

Other differences noted in the various collections appear in the vegetative size, in the oblong-ovoid to cylindrical pseudobulbs, and in the leaves which vary from linear-oblong to elliptic.

The other concepts cited above have already been reduced to the synonymy of *O. bryolophotum*.

***Oncidium incarum* (Kränzl.) C. Schweinfurth comb. nov.**

Cyrtochilum Incarum Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 58.

Since it seems unwise to regard the concept *Cyrtochilum* as distinct from the large and variable genus *Oncidium*, the above transfer is necessary.

***Oncidium macranthum* Lindley var. *hastiferum* (Reichb.f. & Warsc.) C. Schweinfurth comb. nov.**

Oncidium hastiferum Reichenbach filius & Warscewicz in Bonpl. 2 (1854) 102; Reichenbach filius in Walp. Ann. 6 (1863) 703.

Cyrtochilum hastiferum Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 34.

Judging by the descriptions of *Oncidium hastiferum* and by a drawing in the Reichenbach Herbarium, made from cultivated material, it appears preferable to con-

sider this concept as a variant of the widespread *O. macranthum*. It seems to differ from *O. macranthum* only in having one large median keel flanked by a smaller lamella on each side (instead of three equal lamellae) and in having narrower ligulate wings on the column.

Oncidium obryzatum *Reichenbach filius & Warscewicz* in Bonpl. 2 (1854) 108; Regel in Gartenfl. 27 (1878) t. 925; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 239, fig. 20 B, a-d.

The Peruvian collection cited below shows several discrepancies from typical examples of *O. obryzatum* in the Ames Herbarium.

The pseudobulb is bifoliate, not unifoliate as described. The leaves are longer than exemplified, being up to 52.5 cm. long. The branches of the peduncle appear to be rather more distant than otherwise shown, being about 5-6.5 cm. (instead of 2-4 cm.) apart. The sepals and petals, although closely similar to those of the typical form, are somewhat abruptly acute, rather than obtuse or rounded or even retuse. The narrow middle part of the lip is somewhat broader than usual and the anterior portion or middle lobe is narrower relative to the basal portion. The column wings are merely acute, not acuminate, above.

In view of the general agreement of this specimen with the typical form, however, this collection is incorporated with *O. obryzatum*.

PERU: Cajamarca, Cutervo, about Socota, on Socota River, at 2800 meters altitude, epiphyte, December 11, 1938, *H. E. Stork & O. B. Horton* 10152.

Oncidium pyramidale *Lindley* in Ann. & Mag. Nat. Hist. 15 (1845) 384; Fol. Orch. Oncidium (1855) 29, no. 98; Veitch Man. Orch. Pl., pt. 8 (1892) Oncidium 73; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 195, fig. 16 J, a-c.

Oncidium chrysopyramis Reichenbach filius & Warscewicz in Bonpl. 2 (1854) 108; Lindley Fol. Orch. Oncidium (1855) 29, no. 97; Veitch Man. Orch. Pl., pt. 8 (1892) Oncidium 25; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 196, fig. 16 F, a-d.

Judging from drawings of the habit and floral analyses of *Oncidium chrysopyramis* from the Reichenbach Herbarium, supplemented by the descriptions, it does not seem reasonable to separate this concept from the earlier *O. pyramidale*. The latter species appears to differ from *O. chrysopyramis* in having a longer panicle with the lower branches often compound and many-flowered, not simple and 3- to 5-flowered—a character which is variable and therefore unimportant as a basis for specific separation.

The basal portion of the lip is described as being broader than the anterior portion in both species, contrary to remarks made by Reichenbach following his description of *O. chrysopyramis*.

Again, the wings of the column, a character which was considered of great consequence in separating the concepts, appear to be highly variable in Reichenbach's own figures. Indeed, the column-wings shown in the pen drawing on the type collection of *O. pyramidale* appear to be a close approximation to some of those depicted by Reichenbach for *O. chrysopyramis*.

Oncidium superbiens Reichenbach filius in Linnaea 22 (1849) 843; Hooker filius in Bot. Mag. 98 (1872) t. 5980; Warner & Williams Orch. Alb. 6 (1887) t. 276.

Oncidium aemulum Reichenbach filius & Warscewicz in Bonpl. 2 (1854) 102.

Oncidium inferlobum hort. ex Gard. Chron. (1872) 904, *in synon.*

Oncidium undulatum Warner & Williams Orch. Alb.

8 (1889) t. 368, non *O. undulatum* (HBK.) Lindl. (1842).

Cyrtochilum aemulum Kränzlin in Notizbl. Bot. Gart. Berlin 7 (1917) 93, *nomen nudum, in clavi*; in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 47, fig. 3 C, a-e.

Cyrtochilum superbiens Kränzlin in Notizbl. Bot. Gart. Berlin 7 (1917) 93, *nomen nudum, in clavi*; in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 49, fig. 3 E, a-f.

After a careful comparison between *Oncidium superbiens* (represented by a photograph of the type and the type description) and *O. aemulum* (represented by a photograph of Lindley's concept, supplemented by the type description), I am unable to separate the two species.

All the specimens of *O. superbiens* noted appear to have the petals yellowish or whitish, more or less barred below with brown or purplish brown, whereas there is no record of such coloring in *O. aemulum*.

The figures of these concepts in the Pflanzenreich (under *Cyrtochilum*) confirm my conclusions that they are conspecific.

Oncidium ventilabrum Reichenbach filius & Warscewicz in Bonpl. 2 (1854) 101; Lindley Fol. Orch. *Oncidium* (1855) 6, no. 12.

Cyrtochilum undulatum Humboldt, Bonpland & Kunth Nov. Gen. et Sp. Pl. 1 (1816) 349, t. 84; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 57.

Oncidium undulatum Lindley Sert. Orch. (1842) sub t. 48, no. 1; Reichenbach filius & Warscewicz in Bonpl. 2 (1854) 108; Lindley Fol. Orch. *Oncidium* (1855) 7, no. 15, nec *Oncidium undulatum* Sims (1804) nec *O. undulatum* Salisb. (1812).

Cyrtochilum ventilabrum Kränzlin in Notizbl. Bot.

Gart. Berlin 7 (1917) 92, *nomen nudum*, in *clavi*; in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 39, fig. 2 C, a-c.

In his original description of *Oncidium ventilabrum* Reichenbach admitted that this species was close to *O. undulatum* Lindl., but he adduced several supposedly weighty reasons for separating them. Among other features he said, "Zunächst hat unsre Art zweimal so grosse Blüthen, die seitlichen Sepala breiter, das obere länger. Der mit dem Fuss der Säule verwachsene Lippennagel ist viel länger. . . ."

In the Ames Herbarium there are several records of *Oncidium ventilabrum* (a drawing of a flowering branch and numerous floral analyses) from the Reichenbach Herbarium, and these show a rather striking agreement both in size and form of sepals and petals with those shown in the plate of the type of *Cyrtochilum undulatum* (l.c.). Moreover, the lip is depicted as sessile in both concepts. The form of the lip and the calli at the base of the lamina are supposed to be different in the two species, but in the drawings of *O. ventilabrum* there is a rather wide range in these features. Furthermore, in the remarks about *O. undulatum* (in Bonpl. 2, p. 108) Reichenbach described a lip-callus which is rather similar to that shown in *O. ventilabrum*.

It appears to be the wise procedure to eliminate the necessity of straining for supposed differences between these two concepts and to consider them conspecific.

However, since there is an earlier and different *Oncidium undulatum*, it is necessary to reject this specific epithet and to adopt the next earlier name, *Oncidium ventilabrum*.

Sigmatostalix *Reichenbach filius* in Bot. Zeit. 10 (1852) 769; Schlechter in Fedde Repert. 15 (1918) 139;

Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 301.

Petalocentrum Schlechter in Fedde Repert. 15 (1918) 144; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 312.

The concept *Petalocentrum* was separated from the variable genus *Sigmatostalix* by reason of three alleged differences (Cf. Schlechter in Fedde Repert. 15 (1918) 145), viz. the sessile lip, the spur-like outgrowth at the base of the petals and the ascending rostellum.

The characterization of the lip in the type description of *Sigmatostalix* (l.c), to be sure, specifies "labellum unguiculatum." However, the lip in the typical species, *S. graminea* (as *Specklinia graminea* Poepp. & Endl. in Nov. Gen. ac Sp. 1 (1836) 51, t. 89 B), appears to be cuneate below to a sessile base; and, even if the analysis is discarded as being inadequate (on the basis of later representations), that organ seems to be at most only very shortly unguiculate.

At any rate, some species which were described as belonging to *Sigmatostalix*, such as the Central American *S. hymenantha* Schltr., have the basal part of the lip more or less cuneate to a sessile base (apparently very broadly cuneate). And other species, such as *S. macrobulbon* Kränzlin, have an absolutely sessile lip. In the face of such wide variation, therefore, it seems advisable to discard this character, at least as to its generic value.

As regards the spur-like outgrowth on the petals, this character appears to be quite absent in some species with a strikingly sessile lip which were referred to *Sigmatostalix*, such as *S. macrobulbon* Kränzlin. Nor does this character appear in *S. hymenantha* Schltr. with the broadly cuneate base to the lip. It would seem, therefore, that this outgrowth on the petals, seen in one poly-

morphic species of this alliance, is scarcely of generic weight when taken alone.

Finally, the factor of an ascending rostellum appears to be a matter of degree, even if not too recondite and obscure for ordinary recognition in the dried specimen.

It appears to me that the wise course is to relegate *Petalocentrum* to the synonymy of the variable genus *Sigmatostalix*.

The concept, *Petalocentrum angustifolium*, the only one of the genus not previously described as representing *Sigmatostalix*, was considered identical with *Sigmatostalix pusilla* Schltr. (cf. Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 312), and the generic identity of the concepts *Petalocentrum* and *Sigmatostalix* was once suspected by Kränzlin (cf. l.c. 313).

***Sigmatostalix peruviana* Rolfe** in Kew Bull. (1910) 371.

Sigmatostalix pusilla Schlechter in Fedde Repert. 10 (1912) 392.

Sigmatostalix bicornuta Rolfe in Kew Bull. (1913) 342.

Petalocentrum pusillum Schlechter in Fedde Repert. 15 (1918) 145; Kränzlin in Engler Pflanzenr. IV. 50, pt. 2 (Heft 80) (1922) 312; ex Mansfeld in Fedde Repert. Beih. 58 (1930) t. 59, nr. 235.

Petalocentrum angustifolium Schlechter in Fedde Repert. 15 (1918) 145; ex Mansfeld in Fedde Repert. Beih. 58 (1930) t. 59, nr. 234.

Petalocentrum bicornutum Schlechter in Fedde Repert. Beih. 9 (1921) 179.

All of the concepts cited above appear to be closely similar vegetatively, although *Sigmatostalix pusilla* is described as having markedly shorter pseudobulbs and leaves than the others. It is significant that the sepals and petals of all of the concepts are of almost exactly the

same form and size, the only discrepancy being in the degree of acuteness of the apex. In *S. peruviana* there is no mention of a horn at the base of the petals (which occurs in all of the others), but this species seems surely identical with *S. bicornuta*, even the color of the flowers being nearly identical. The lip seems to vary somewhat in size in the various species, but it appears to be of very similar form throughout. A rather wide diversity is described in the callus on the lip in the various concepts, but it is noteworthy that this feature appears to be often very variable in a single species of *Sigmatostalix*.

Since, without actual specimens, it would be extremely difficult to recognize differences between these species, the wise course suggests their union.

***Ornithocephalus gladiatus* Hook. var. *peruvianus* C. Schweinfurth var. nov.**

Planta scapis brevioribus folia non valde excedentibus, sepalorum mucronibus valde prominentibus, sepalo dorsali quam sepalis lateralibus majore, ac praesertim labelli callo margines basales solum paulo superanti a specie differt.

Plant small, with the general appearance of *Ornithocephalus gladiatus* Hook., but differing in having scapes shorter than or subequaling (not markedly exceeding) the leaves, in having a very conspicuous mucro on the sepals, in having the dorsal sepal somewhat larger than the lateral sepals, and particularly in having a less prominent and spreading basal callus on the lip which but slightly exceeds the margins.

PERU: Junín, La Merced, at about 610 meters altitude, in montaña, on tree trunk, flowers white with green markings, August 10-24, 1923, *J. Francis Macbride* 5480 (TYPE in Herb. Field Mus. No. 536520).

ILLUSTRATIONS

EXPLANATION OF THE ILLUSTRATION

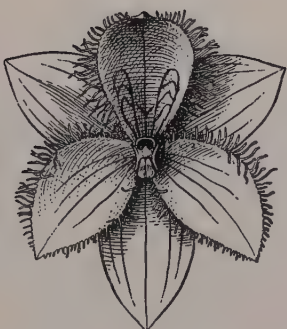
PLATE XII. CRANICHIS CILIILABIA *C. Schweinfurth.*
1, plant, natural size. 2, flower expanded, from
the front, four times natural size. 3, half of the
lip, cut longitudinally, from the side, seven times
natural size.

Drawn by E. W. SMITH

CRANICHIS

ciliilabia

C. Schweinf.



E. W. Smith

EXPLANATION OF THE ILLUSTRATION

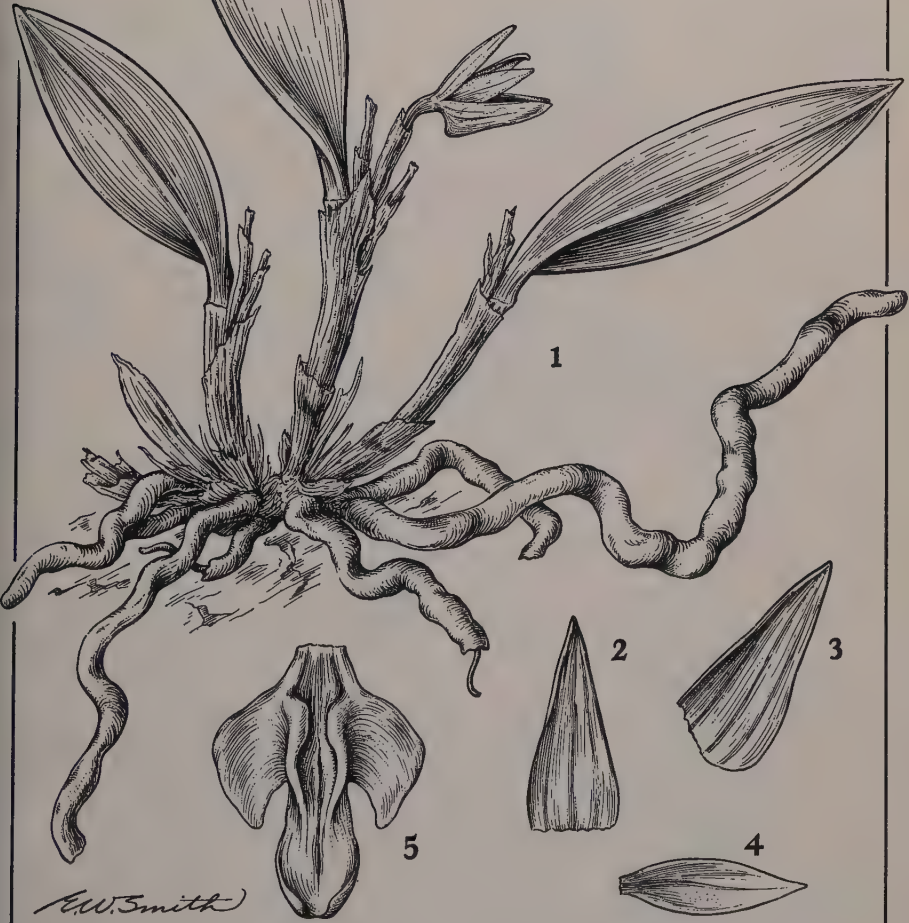
PLATE XIII. OCTOMERIA PYGMAEA *C. Schweinfurth*.
1, plant, eight times natural size. 2, dorsal sepal,
sixteen times natural size. 3, lateral sepal, sixteen
times natural size. 4, petal, sixteen times natural
size. 5, lip expanded, from above, thirty-two times
natural size.

Drawn by E. W. SMITH

OCTOMERIA

pygmaea

C. Schweinf.



EXPLANATION OF THE ILLUSTRATION

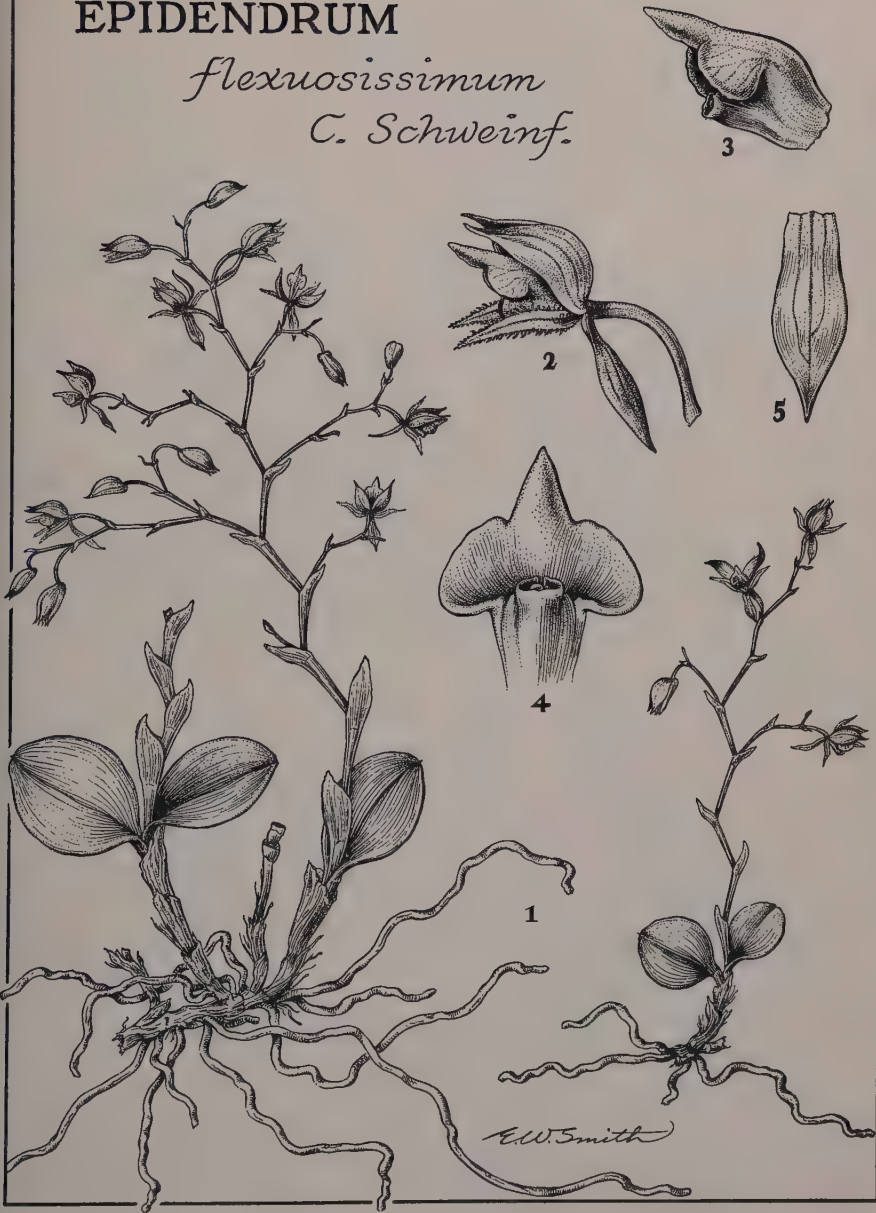
PLATE XIV. EPIDENDRUM FLEXUOSISSIMUM *C. Schweinfurth*. 1, plant, three fourths natural size. 2, flower from the side, natural position, two and one half times natural size. 3, lip and column from the side, natural position, three and one half times natural size. 4, lamina of lip expanded and apex of column, from the front, five times natural size. 5, dorsal sepal, three and one half times natural size.

Drawn by E. W. SMITH

EPIDENDRUM

flexuosissimum

C. Schweinf.



EXPLANATION OF THE ILLUSTRATION

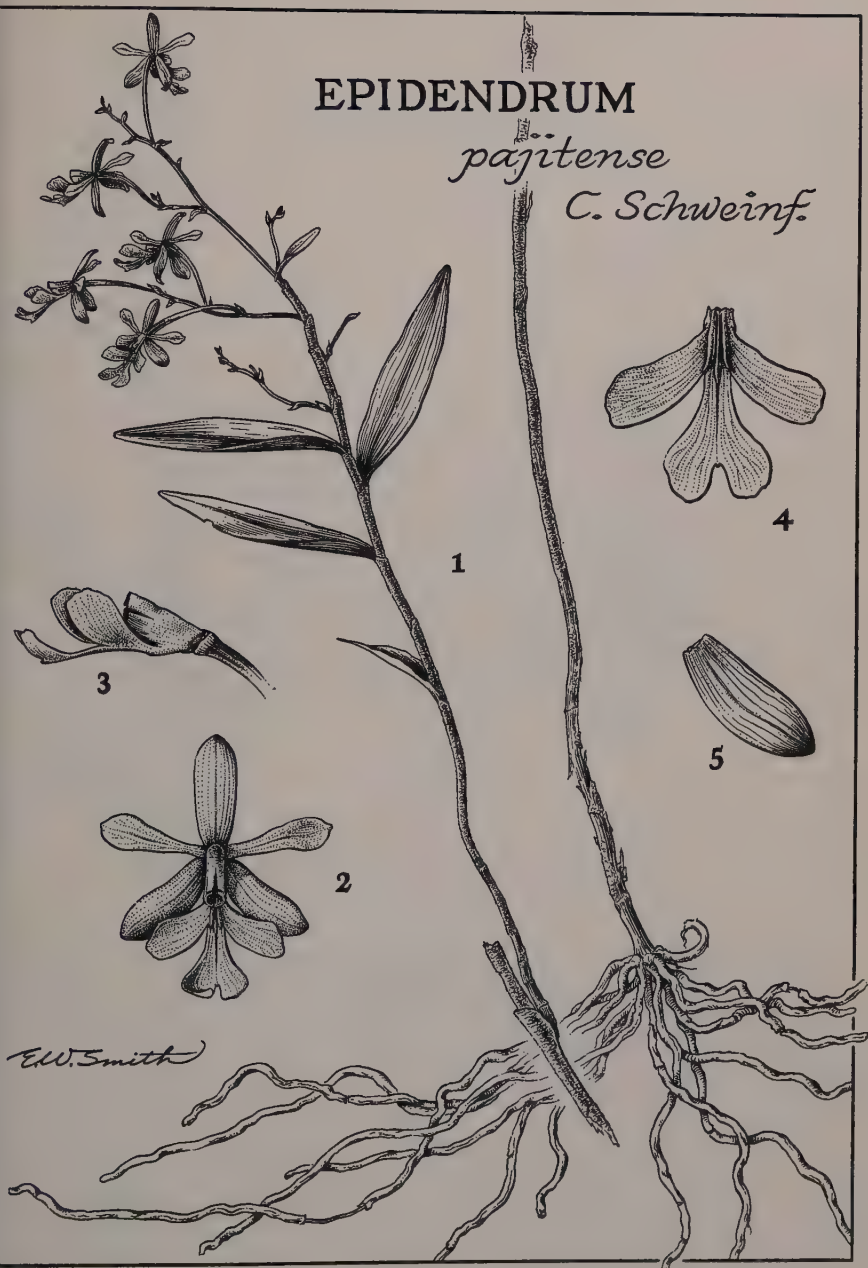
PLATE XV. EPIDENDRUM PAJITENSE *C. Schweinfurth*.
1, plant, one half natural size. 2, flower partially
expanded, from the front, one and one half times
natural size. 3, lip and column from the side, nat-
ural position, one and one half times natural size.
4, lamina of lip expanded, from the front, twice
natural size. 5, lateral sepal, twice natural size.

Drawn by E. W. SMITH

EPIDENDRUM

pajitense

C. Schweinf.



EXPLANATION OF THE ILLUSTRATION

PLATE XVI. EPIDENDRUM STRICTIFORME *C. Schweinfurth*. 1, plant, seven sixteenths natural size. 2, flower expanded, from the front, two and one half times natural size. 3, column and lip from the side, natural position, two and one half times natural size. 4, lateral sepal, two and one half times natural size.

Drawn by E. W. SMITH

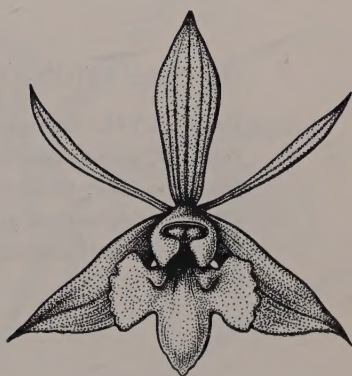
EPIDENDRUM

strictiforme

C. Schweinf.



1



2



3



4

E. W. Smith

EXPLANATION OF THE ILLUSTRATION

PLATE XVII. *BRASSAVOLA OVALIFORMIS* C. Schweinfurth. 1, plant, one half natural size. 2, column from the side, twice natural size. 3, column from above, twice natural size. 4, lip expanded, from the front, one half natural size.

Drawn by E. W. SMITH

BRASSAVOLA

ovaliformis

C. Schweinf.

